

## PHARMA GRADE PROTEIN STABILISATION KIT (STKPH)

### Introduction

The stabilisation kit you have received is designed for the stabilisation of proteins, enzymes and peptides in the dry state and in solution. These formulations are approved for use in pharmaceutical/animal feed products. The instructions below are to be used as a guideline only and the solutions may need to be optimised for your particular enzyme(s). If you have any problems or need further advice then please do not hesitate to contact us.

### Kit Contents

9 vials each containing 20ml of pharma approved double strength stabilisation formulations, made up in a non-sterile, double distilled water solution, 1 health & safety data sheet, 1 kit instruction sheet.

### Recommended Method of Use

Prior to use, the stabilisation solutions should be checked for compatibility with your working buffers before the addition of the enzyme/protein solution. This includes checking the final pH of the solutions when added to the enzyme solution. pH may have to be adjusted accordingly, normally between pH 6-8. This is only a rough guideline as different enzymes possess different buffer salt requirements, ionic strength preferences and pH optima. Generally a good starting point is Tris/HCL pH 7.0 or Bis-Tris/HCL pH 6.0 (final concentration once diluted with enzyme solution, 50mM). Lower salt concentrations should be used if freeze drying or vacuum drying. The stabiliser solution should be used at a 1 to 1 dilution with the buffer of choice containing the required enzyme concentration. This is only to be used as a rough guide line as these solutions can be used at considerably different concentrations depending on the enzyme concentration to be stabilised.

### Storage Conditions & Shelf Life

At least 6 months Room Temperature  
At least 1 year at 4°C

Frozen Kit 2 years at -20°C

### Notes

1. If possible all previous stabilisers and other additives should be removed from your enzyme solution, as they may be incompatible with these stabiliser solutions.
2. Ideally the enzyme solution should be stored in a low ionic strength compatible buffer.
3. Ideally the final ionic strength of the formulation should be no more than 50mM, however good results have been obtained with final ionic strengths of 200mM for solution stability.
4. It is important to be aware that dilution of the stock solution with your enzyme solution may alter the pH. This should be checked and adjusted accordingly

### Optimisation

Once diluted, as suggested above, the stabilisation formulation should be in 50mM Tris/HCl pH 7 or 50mM Bis-Tris/HCl pH 6. The final molarity and pH of the buffer can be varied to suit your particular enzyme(s). The ratio of stabiliser stock solution to enzyme solution may also be varied in order to optimise the stability.

If dry stability is required, the above formulations can be subjected to a controlled vacuum drying cycle or freeze drying cycle and the stability trials should be carried out in the dry state.

You are now ready to carry out a stability trial on your enzyme/protein of choice.

(N.B. Safety considerations: Wear disposable gloves and safety glasses while working with reagents and thoroughly wash hands after handling. Refer to product labels and Material Safety Data Sheet (s) for additional information as appropriate.)

[Although this product has been tested on a wide variety of enzymes and proteins in solution with wide ranging applications, Applied Enzyme Technology Ltd. cannot anticipate all the possible requirements for enzyme stabilisation by clients, and ultimately cannot be held liable for non-stabilisation of a protein under such circumstances.]

